

Haleakalā Adaptations

Next Generation Science Standards:

- 3-LS3-2 Use evidence to support the explanation that traits can be influenced by the environment.
- 3-LS4-2 Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.
- 3-LS4-4 Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

Hawai'i Content and Performance Standards III:

- SC.3.3.1 Describe how plants depend on animals.
- SC.3.4.1 Compare distinct structures of living things that help them to survive.
- SC.3.5.1 Describe the relationship between structure and functions in organisms.
- SC.3.7.4 Examine the ways in which people modify the physical environment and the effects of these changes.

Description:

In this lesson students will reflect and share about their experience at Haleakalā National Park. They will discuss the effects of various environmental impacts on the survival of plants and animals. There will be an emphasis on how some environmental changes cause organisms to adapt to survive. Students will show their understandings of adaptations by creating a poster and presenting it to the class.

Duration: 60 minutes

Objectives: At the end of this lesson, the students will be able to:

- Describe how plants and animals use adaptations to survive in particular environment.
- Explain how impacts on a habitat can influence the adaptations of a species.

Background:

This lesson is designed to assess the understanding of species adaptations after their field trip to Haleakalā National Park. It is based upon the experiences and lessons completed at the park. It is also meant to illustrate the idea that within nature, everything is interconnected and that disruptions to the ecosystem can have drastic effects on plants and animals. If the effects of pollution, loss of native habitat, or natural disruptions (e.g. volcanic eruption, hurricane, flood, or fire) are too drastic it may even cause a species to become extinct. If it is not so drastic, the species may be able to adapt to the change and survive.

Vocabulary:

Adaptation: A change of form or behavior that helps a species survive in a specific environment.

Camouflage: Coloration or patterns that allow animals to blend into their surroundings.

Ecosystem: A complex set of relationships among the living resources, habitats, and residents of an area.

Extinct: No longer in existence: having died out or ceased to exist.

Pollution: Undesirable state of the natural environment being contaminated with harmful substances as a consequence of human activities.

Survival: Meets the needs of food, water, shelter and space.

Trait: A distinguishing characteristic or quality that makes one organism different from another.

Materials Needed:

Poster Paper

Coloring supplies

Procedure:

Step 1: Reflection on Haleakalā Field Trip

Have students write in their journals about what they learned during their field trip to Haleakalā National Park:

- What are the 2 most interesting things you learned on your trip to Haleakalā National Park?
- Explain 2 survival adaptations of a plant or animal that lives in Haleakalā National Park.
- Why do you think the plants and animals of Haleakalā National Park had to change or adapt?
- Does Haleakalā National Park do a good job in protecting Maui's endemic species? Please explain your answer.

Step 2: Students make "Haleakalā Adaptions" Posters

Their poster should include:

- A drawing of a native plant or animal that they learned about on their field trip to Haleakalā National Park.
- The name of that plant or animal.
- A list of the adaptations that help it to survive in Haleakalā National Park.
 - Examples of animal adaptations: camouflage, color, beak shape.
 - Examples of plant adaptations: leaf shape, hairs, size of plant.

Step 3: Group Presentations of Posters

Students should take turns presenting their posters by describing their species of choice and its adaptations.

Step 4: Impacts on Ecosystems

Once the presentations are finished, follow up with a discussion about the both negative and positive impacts on plant and animal habitats.

- What are the consequences of litter, pollution, habitat loss, droughts, or wildfire?
- What new adaptations might the animals need to survive in the future?
- Discuss some solutions to these negative impacts.
- How does Haleakalā National Park help?
- What can you do to protect habitats where you live?